



## *Service Manual*

For the complete PDF manual  
please visit [www.LaserPros.com](http://www.LaserPros.com).

**Lexmark™ C920**  
**Color Laser Printer**

**5056-XXX**

- ***Table of contents***
- ***Start diagnostics***
- ***Safety and notices***
- ***Trademarks***
- ***Index***



Lexmark and Lexmark with diamond design are  
trademarks of Lexmark International, Inc., registered  
in the United States and/or other countries.

**Edition: 8/4/05**

**The following paragraph does not apply to any country where such provisions are inconsistent with local law:**  
LEXMARK INTERNATIONAL, INC. PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions; therefore, this statement may not apply to you.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in later editions. Improvements or changes in the products or the programs described may be made at any time.

Comments may be addressed to Lexmark International, Inc., Department D22A/032-2, 740 West New Circle Road, Lexington, Kentucky 40550, U.S.A or e-mail at [ServiceInfoAndTraining@Lexmark.com](mailto:ServiceInfoAndTraining@Lexmark.com). Lexmark may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you. You can purchase additional copies of publications related to this product by calling 1-800-553-9727. In other countries, contact your point of purchase.

References in this publication to products, programs, or services do not imply that the manufacturer intends to make these available in all countries in which it operates. Any reference to a product, program, or service is not intended to state or imply that only that product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any existing intellectual property right may be used instead. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by the manufacturer, are the user's responsibility.

Lexmark and Lexmark with diamond design are trademarks of Lexmark International, Inc., registered in the United States and/or other countries.

PrintCryption is a trademark of Lexmark International, Inc.

PCL® is a registered trademark of the Hewlett-Packard Company.

PostScript® is a registered trademark of Adobe Systems Incorporated.

Other trademarks are the property of their respective owners.

**© 2005 Lexmark International, Inc.**  
**All rights reserved.**

#### **UNITED STATES GOVERNMENT RIGHTS**

This software and any accompanying documentation provided under this agreement are commercial computer software and documentation developed exclusively at private expense.

## Table of contents

<b>Notices and safety information</b>	<b>xiii</b>
Laser notice	xiii
Safety information	xvii
<b>Preface</b>	<b>xx</b>
Definitions	xx
<b>General information</b>	<b>1-1</b>
Overview	1-1
Resolution	1-1
Model differences	1-1
Options and features	1-2
Compatibility	1-2
Technical specifications	1-3
Toner darkness	1-3
Color correction settings	1-3
Physical specifications and weight	1-3
Print speed and performance	1-4
Performance	1-5
Time to first print	1-5
Processor	1-5
Duty cycle	1-5
Printer memory	1-6
Memory configuration	1-6
Available memory options	1-6
Memory and expansion slots	1-6
Resident fonts	1-6
Paper and media specifications	1-7
Media size supported	1-8
Input	1-8
Output	1-10
Input media types and weights	1-12
Input capacity by media and source	1-13
Output capacity by media and source	1-14
Media guidelines	1-15
Paper	1-15
Envelopes	1-15
Transparencies	1-15
Labels	1-15
Lexmark glossy paper	1-15
Print area	1-15
Connectivity	1-16
Standard	1-16
Network connections	1-16
Internal network connections	1-16
Data streams	1-16
Operating systems	1-16
Power and electrical specifications	1-17
Power requirements	1-17
Electrical specifications	1-17
Low voltage models	1-17
High voltage models	1-17
Operating clearances	1-18
Environment	1-18
Printer temperature and humidity	1-18

<b>Maintenance approach</b>	<b>1-19</b>
Standard inspection and cleaning procedure	1-19
Return parts	1-20
Service recommendations	1-20
Tools	1-20
Serial number, configuration ID, and part number	1-20
Acronyms	1-21
<b>Diagnostic information</b>	<b>2-1</b>
Start	2-1
Initial check	2-1
Symptom table	2-3
Printer messages	2-5
Service error message tables	2-5
900 - RIP software error	2-5
910 - Drive Motor Error	2-9
911 - Paper Exit Motor Error	2-9
912 - High-Capacity Feed Motor Error	2-10
917 - RIP Fan Error	2-10
918 - Main Unit Fan Error	2-10
919 - Power Supply Fan Error	2-10
920 - Fuser Error— Fuser Heater Trouble	2-11
923 - Upper Fuser Thermistor Open Error	2-11
924 - Lower Fuser Thermistor Open Error	2-11
925 - HVU Error	2-12
926(K), 927(C), 928(Y), 929(M) - Toner Sensor Error	2-12
930 - Yellow Printhead Error	2-13
931 - Magenta Printhead Error	2-13
932 - Cyan Printhead Error	2-14
933 - Black Printhead Error	2-14
934 - Color Drum Sensor Error	2-15
935 - Black Drum Sensor Error	2-15
936 - 939 Cassette Error	2-15
940 - High-Capacity Feed Sensor Error	2-16
941 - High-Capacity Feed Tray Error	2-16
942 - Duplex Error	2-16
945 - Engine Flash Error	2-16
946 - Printer/Printhead Controller Board Communication Error	2-17
947 - Finisher Communication Error	2-17
948 - Machine ID Error	2-18
949 - Tray (x) Comm	2-18
950 - Mirror Mismatch	2-19
952 - NVRAM Chip Failure	2-19
954 - NVRAM CRC Failure	2-19
955 - Code CRC	2-19
956 - Processor Failure	2-20
957 - ASIC Failure	2-20
958 - NAND Failure	2-20
960 - RAM Slot 1 Bad	2-20
961 - RAM Slot 2 Bad	2-20
964 - Emulation Error	2-20
970 - Standard Network Error	2-20
975 - Unrecognizable Network Port	2-20
976 - Unrecoverable Software Error in Network Port	2-21
978 - Bad Checksum While Programming Network Card	2-21
979 - Flash Parts Failed While Programming Network Port	2-21
980 Face Up/Down Switching Error	2-21
981 - Belt Up/Down Sensor Error	2-22
982 - Sensor Controller Error	2-23

983 - Black Gear Sensor Error	2-23
984 - Yellow Gear Sensor Error	2-23
985 - Transfer Belt Thermistor Error	2-24
986 - Transparency (OHP) Sensor Error	2-24
987 - Service Toner Cartridge	2-24
991 - Service Paper Option	2-25
992 - Temperature/Humidity Sensor Error	2-25
993 - CPU Error	2-25
994 - Density Sensor Error	2-26
995 - Finisher Main Feed Motor abnormal	2-27
996 - Finisher Jogging Motor Error	2-27
997 - Finisher Tractor Motor Error	2-28
998 - Tray Elevator Motor Error	2-28
999 - Stapler Motor Error	2-29
<b>Attendance messages</b>	<b>2-30</b>
Clearing finisher messages	2-42
<b>Maintenance analysis procedures (MAPS)</b>	<b>2-43</b>
Map 1 - False Side Door Open message	2-43
Map 2 - False Close Front Door message	2-43
Map 3 - False Close Tray (x) Top Cover message	2-43
Map 4 - False Tray (x) Low/Empty message	2-44
Map 5 - False 30 Oil Coating Roll Missing message	2-44
Map 6 - False <color> Print Unit Missing message	2-45
Map 7 - False 88 <color> Toner Low/Toner Empty message	2-45
Map 8 - False 40 Tray (x) Size Sensor Error message	2-46
Map 9 - False 41 Open Bin 1 Exit Tray message	2-46
Map 10 - Unrecoverable Check Tray (x) or Duplex Connection message	2-47
Map 11 - Paper size map	2-48
Map 12 - Unable to print from USB drive service check	2-49
Map 13 - False tray (x) too full	2-49
Map 14 - False 32 - replace unsupported cartridge	2-49
<b>Service checks</b>	<b>2-50</b>
Drive 1 DC motor service check	2-50
Paper exit motor service check	2-50
Duplex unit service check	2-50
Paper feed unit service check	2-51
Expansion paper feed service check	2-52
Face down stacker full service check	2-52
High-capacity feeder (HCF) service check	2-53
Finisher service check	2-54
Marks on paper service check	2-55
Operator panel service check	2-55
Paper carrying service check	2-56
Paper exit, face up service check	2-60
Paper skew service check	2-60
Paper tray missing service check	2-60
Photodeveloper missing service check	2-61
Power supply service check	2-61
210 Staple jam service check	2-62
Transfer belt up/down service check	2-62
<b>Image quality troubleshooting</b>	<b>2-63</b>
<b>Print quality problems</b>	<b>2-63</b>
No image	2-66
Black line	2-66
Black print	2-67
Missing colors	2-67
Uneven printing	2-67
Periodic dirt	2-68
White spots	2-68

<b>Options service check</b>	<b>2-68</b>
Serial port	2-68
Flash Memory Option(s)	2-68
DRAM Memory Option(s)	2-68
Hard Disk Option	2-68
Network Card Option	2-69
Error Code 976 - Network Card x	2-69
54 Network <x> Software Error	2-69
<b>Diagnostic aids</b>	<b>3-1</b>
<b>Power-On Self Test sequence</b>	<b>3-1</b>
<b>Understanding the printer operator panel</b>	<b>3-2</b>
<b>Printing the menu settings</b>	<b>3-3</b>
<b>Operator menu disabled</b>	<b>3-3</b>
<b>Menu overview</b>	<b>3-4</b>
<b>Diagnostics</b>	<b>3-5</b>
Navigating the Diagnostics Menu	3-5
Diagnostics Menu Overview	3-5
<b>Alignment</b>	<b>3-7</b>
Auto Alignment	3-7
Cyan, Yellow, Magenta	3-7
<b>Print Tests</b>	<b>3-8</b>
"[Input Source]" Print Test	3-8
Output Bin 1 (Print Tests)	3-8
Print Quality Pages	3-8
<b>Hardware Tests</b>	<b>3-8</b>
Panel Test	3-8
Button Test	3-9
Cache Test	3-9
DRAM Test	3-10
Parallel Wrap Test	3-10
Serial Wrap Test	3-12
<b>Output Bin Tests</b>	<b>3-13</b>
Feed Tests (Output Bin)	3-13
Feed To All Bins	3-13
Sensor Test (Output Bin)	3-13
<b>Finisher Tests</b>	<b>3-14</b>
Feed Test	3-14
Hole Punch Test	3-14
Sensor/Sw Test	3-14
Staple Test	3-15
<b>Device Tests</b>	<b>3-16</b>
Quick Disk Test	3-16
Disk Test/Clean	3-16
Flash Test	3-16
<b>Printer Setup</b>	<b>3-17</b>
Defaults	3-17
Light Quantity	3-17
Page Counts	3-17
Serial Number	3-18
Model Name	3-18
Configuration ID	3-18
Reset Color Calibration	3-19
Par [x] Strobe Adj.	3-19
Par S Strobe Adj	3-19
Par 1 Strobe Adj	3-19
Par 2 Strobe Adj	3-19
Par 3 Strobe Adj	3-19

Event Log .....	3-20
Display .....	3-20
Print .....	3-20
Clear .....	3-20
Exit Diagnostics .....	3-20
Configuration menu .....	3-21
Black only mode .....	3-21
Print quality pages .....	3-21
Color trapping .....	3-21
Panel menus .....	3-21
PPDS emulation .....	3-21
Demo mode .....	3-21
Factory defaults .....	3-22
Energy conserve .....	3-22
Event log .....	3-22
Auto align adjust .....	3-22
Auto color adjust .....	3-22
Paper prompts .....	3-22
Envelope prompts .....	3-22
Jobs on disk .....	3-23
Disk encryption .....	3-23
Font sharpening .....	3-23
Standby disabled .....	3-23
Exit config menu .....	3-23
Theory of operation .....	3-24
Processes and configuration .....	3-24
Electrophotography process .....	3-24
Development unit .....	3-24
Transfer unit .....	3-25
Cleaning unit .....	3-25
Fusing .....	3-26
Drive system .....	3-28
Paper feeding .....	3-29
Cassette paper feeder .....	3-29
Multipurpose feeding .....	3-30
Registration unit .....	3-30
Belt unit .....	3-31
Belt up/down .....	3-31
Delivery .....	3-32
Expansion paper feeder .....	3-32
Duplex unit .....	3-32
Paper weight .....	3-33
Purpose: .....	3-33
Values: .....	3-33
Clearing paper jams .....	3-34
200 Paper Jam .....	3-34
250 Paper Jam .....	3-36
241–244 Paper Jam .....	3-37
249 Paper Jam .....	3-37
High-capacity feeder (HCF) .....	3-38
Paper feed and separation mechanism .....	3-38
Registration operation .....	3-38
Tray up/down mechanism .....	3-39
Tray up condition .....	3-40
Tray down condition .....	3-40
Size detection mechanism .....	3-41
Residual paper detection mechanism .....	3-42
Paper end detection .....	3-42

<b>Maintenance Mode</b> .....	<b>3-43</b>
DIP switch specifications .....	3-43
<b>Finisher</b> .....	<b>3-44</b>
Finisher cross section .....	3-45
Electrical parts function .....	3-45
Paper feed mechanism .....	3-46
Straight paper path (exit paper to upper tray) .....	3-46
Path select gate .....	3-46
Inverting paper path (exit paper to lower tray through accumulator) .....	3-47
Accumulator .....	3-47
Paper registration sequence .....	3-48
Punch unit driving sequence .....	3-48
Jogging / offset mechanism .....	3-49
Jogging sequence .....	3-49
Offsetting sequence .....	3-49
Detection of fixed position .....	3-49
Stapling mechanism .....	3-50
Elevator sequence .....	3-51
<b>Finisher installation</b> .....	<b>3-52</b>
Attaching the docking plate and guide rail .....	3-52
Combining the finisher and stand .....	3-54
Attaching the bins .....	3-58
Aligning the finisher and printer .....	3-59
Lowering or raising the finisher .....	3-60
Aligning the sides of the finisher .....	3-62
Aligning the top of the finisher .....	3-63
Adjusting the wheels .....	3-64
Attaching the cables .....	3-65
Interface cable .....	3-66
Power cable .....	3-67
Hole punch adjustment .....	3-69
<b>Repair information</b> .....	<b>4-1</b>
Handling ESD-sensitive parts .....	4-1
Service precautions .....	4-1
RIP board/operator panel replacement .....	4-2
Handling printed circuit boards .....	4-2
Transportation/storage .....	4-2
Replacement: .....	4-2
Inspection: .....	4-2
Check finisher alignment when moving or servicing the finisher .....	4-3
Adjustments .....	4-4
High-capacity paper feed timing belt adjustment .....	4-4
Adjustments and procedures following parts replacement .....	4-4
Removals .....	4-6
Cover, top removal .....	4-6
Front door / operator panel removal .....	4-7
Cover, front left removal .....	4-8
Cover, rear removal .....	4-9
Cover, solenoid removal .....	4-9
Cover, left side removal .....	4-9
Cover, right side removal .....	4-10
Cover, RIP board removal .....	4-11
Tray, paper exit removal .....	4-12
Belt up/down clutch removal .....	4-12
Cassette guide removal .....	4-13
CK1 daughter board removal .....	4-13
CK2 daughter board removal .....	4-13
Connector, duplex unit removal .....	4-14



Paper tray lift motor removal .....	4-14
Density sensor removal/Separation fingers removal/Sensor cleaner removal .....	4-15
Drive gear unit sensor assembly removal .....	4-15
Electronic box removal .....	4-16
Face up paper exit assembly removal .....	4-17
Front cover open switch actuator removal .....	4-17
Fuser removal .....	4-18
Gear cover removal/Multipurpose feeder frame assembly .....	4-19
High voltage power supply board (HVPS) removal .....	4-20
LED printhead removal .....	4-20
Eraser removal .....	4-21
Lock handle assembly removal .....	4-22
Main drive unit removal .....	4-23
Main unit fan removal .....	4-25
Motor drive board removal .....	4-25
Multipurpose feeder paper present sensor removal .....	4-25
Multipurpose feeder tray removal .....	4-26
Paper feed unit removal .....	4-26
Paper-feed rollers removal .....	4-28
Paperpath maintenance .....	4-28
Paper carrying frame removal / roll removal .....	4-29
Registration frame .....	4-30
Registration clutch removal .....	4-30
Registration sensor removal .....	4-30
.....	4-30
Relay roller removal .....	4-31
Face down guide assembly removal .....	4-32
Face down exit roll removal .....	4-32
Power supply 1 removal .....	4-35
Power supply 2 removal .....	4-36
Power switch removal .....	4-37
Printer controller removal .....	4-37
Printhead controller board removal .....	4-38
Left slide rail removal .....	4-39
RIP box removal .....	4-39
Sensor board removal .....	4-40
Stay arm removal .....	4-40
Sub-frame removal .....	4-41
Sub frame F1, sub frame F2 removal .....	4-42
Temperature/humidity sensor removal .....	4-42
Top unit removal .....	4-43
Transfer belt removal .....	4-43
Turn guide cover sensor removal .....	4-47
Upper fan removal .....	4-47
Expansion feeder removals .....	4-49
Turn guide door removal .....	4-49
Expansion feeder controller board removal .....	4-49
Size sensor board removal .....	4-49
Stepper motor removal .....	4-50
Paper feed assembly removal .....	4-51
Paper tray lift motor removal .....	4-52
Expansion feeder turn guide door sensor assembly removal .....	4-52

<b>Duplex removals</b>	<b>4-53</b>
Duplex unit separation removal	4-53
Duplex unit removal	4-54
Duplex timing belt removal	4-54
Duplex pressure roller and solenoid removal	4-55
Duplex feed roller and solenoid removal	4-55
Duplex side fence motor assembly/side fence removal	4-56
Duplex paper carrying motor removal	4-57
<b>High-capacity feeder (HCF) removals</b>	<b>4-58</b>
HCF covers removal	4-58
HCF call roller, paper feed roller, reverse roller removal	4-59
HCF pickup solenoid removal	4-59
HCF paper end sensor removal	4-60
HCF paper size sensors (1, 2) removal	4-60
HCF tray motor removal	4-61
HCF paper level sensor removal	4-62
HCF power supply removal	4-62
<b>Finisher removals</b>	<b>4-63</b>
External covers removals	4-63
Finisher control board removal	4-64
Elevator motor removal	4-65
Feed motor assembly removal	4-65
Hole punch removal	4-66
Inverter paper exit discharge brush removal	4-67
Inverter paper exit roller removal	4-67
Jogging unit removal	4-68
Path select gate removal	4-69
Patting roller removal	4-70
Power supply removal	4-72
Registration roller removal	4-73
Registration roller clutch removal	4-73
Stack area discharge brush removal	4-74
Staple unit removal	4-74
Straight paper exit discharge brush removal	4-75
Straight paper exit roller removal	4-75
Timing belts 1 and 2 removal	4-77
Tractor belt removal	4-78
Tractor drive motor assembly removal	4-79

## **Locations** **5-1**

Covers diagram	5-1
Major parts diagram	5-2
Sensor and switch locations	5-3
Component locations	5-4
Printer controller board	5-5
Printer controller board connectors	5-6
Printhead controller board	5-7
Printhead controller board connectors	5-8
CK1 board connectors	5-9
CK2 board connectors	5-10
RIP board	5-11
RIP board connectors	5-11
LVPS 1 board connectors	5-12
LVPS 2 board connectors	5-13
High voltage power supply board	5-14
Sensor board connectors	5-14
Expansion paper feeder controller board	5-15
Duplex unit controller board	5-16
Motor drive board connectors	5-16

Size sensor board .....	5-17
Paper feed actuators .....	5-18
Paper feed roller clutch .....	5-18
High-capacity feeder (HCF) .....	5-19
High-capacity paper feed configuration .....	5-19
Electrical parts layout .....	5-20
Driving parts layout .....	5-20
Finisher locations .....	5-21
<b>Preventive maintenance .....</b>	<b>6-1</b>
Maintenance kit .....	6-1
Paper path maintenance .....	6-1
Periodic maintenance .....	6-2
Lubricants and cleaners .....	6-2
<b>Parts catalog .....</b>	<b>7-1</b>
How to use this parts catalog .....	7-1
Assembly 1: Covers 1 .....	7-2
Assembly 2: Covers 2 .....	7-4
Assembly 3: Covers 3 .....	7-5
Assembly 4: Covers 4 .....	7-6
Assembly 5: Covers 5 .....	7-7
Assembly 6: Upper unit .....	7-8
Assembly 7: Paper feed .....	7-10
Assembly 8: Base 2 .....	7-12
Assembly 9: Base 3 .....	7-14
Assembly 10: Electrical A .....	7-16
Assembly 11: Electrical B .....	7-20
Assembly 12: RIP board .....	7-22
Assembly 13: Fuser unit .....	7-23
Assembly 14: Cassette .....	7-24
Assembly 15: Expansion feeder 1 .....	7-26
Assembly 16: Expansion feeder 2 .....	7-28
Assembly 17: Duplex unit 1 .....	7-30
Assembly 18: Duplex Unit 1 .....	7-31
Assembly 19: Duplex unit 2 .....	7-32
Assembly 20: High-capacity feeder 1 .....	7-34
Assembly 21: High-capacity feeder 2 .....	7-36
Assembly 22: High-capacity feeder 3 .....	7-38
Assembly 23: High-capacity feeder 4 .....	7-40
Assembly 24: High-capacity feeder 5 .....	7-42
Assembly 25: High-capacity feeder 6 .....	7-44
Assembly 26: Finisher covers .....	7-46
Assembly 27: Finisher frame .....	7-48
Assembly 28: Finisher feed 1 .....	7-50
Assembly 29: Finisher feed 2 .....	7-52
Assembly 30: Finisher elevator .....	7-53
Assembly 31: Finisher electronics .....	7-54
Assembly 32: Finisher docking 1 .....	7-55
Assembly 33: Finisher docking 2 .....	7-56
Assembly 34: Miscellaneous/options .....	7-57
Assembly 35: Parts packets .....	7-58
Assembly 36: Finisher parts packet P/N 56P9480 .....	7-63
<b>Index .....</b>	<b>I-1</b>
<b>Part number index .....</b>	<b>I-7</b>

For the complete PDF manual  
please visit [www.LaserPros.com](http://www.LaserPros.com).